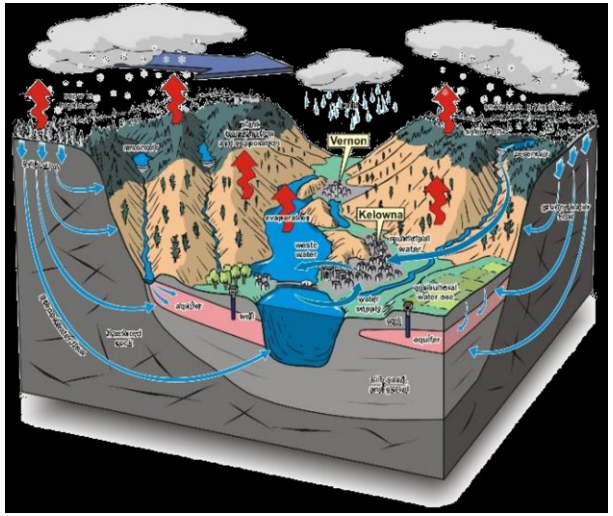
November 16, 2020

Project Update

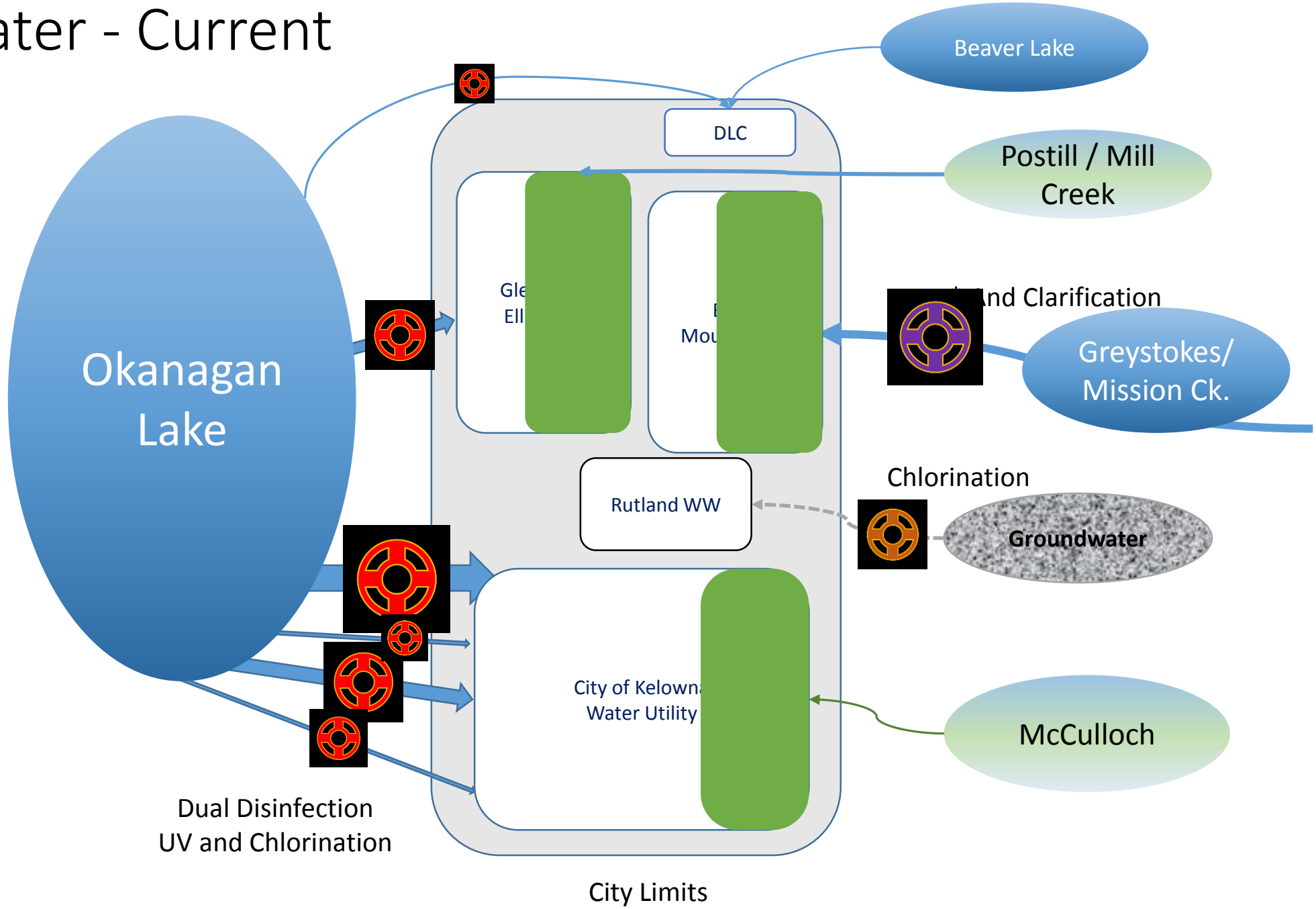
Kelowna Area-Based Water Management Plan



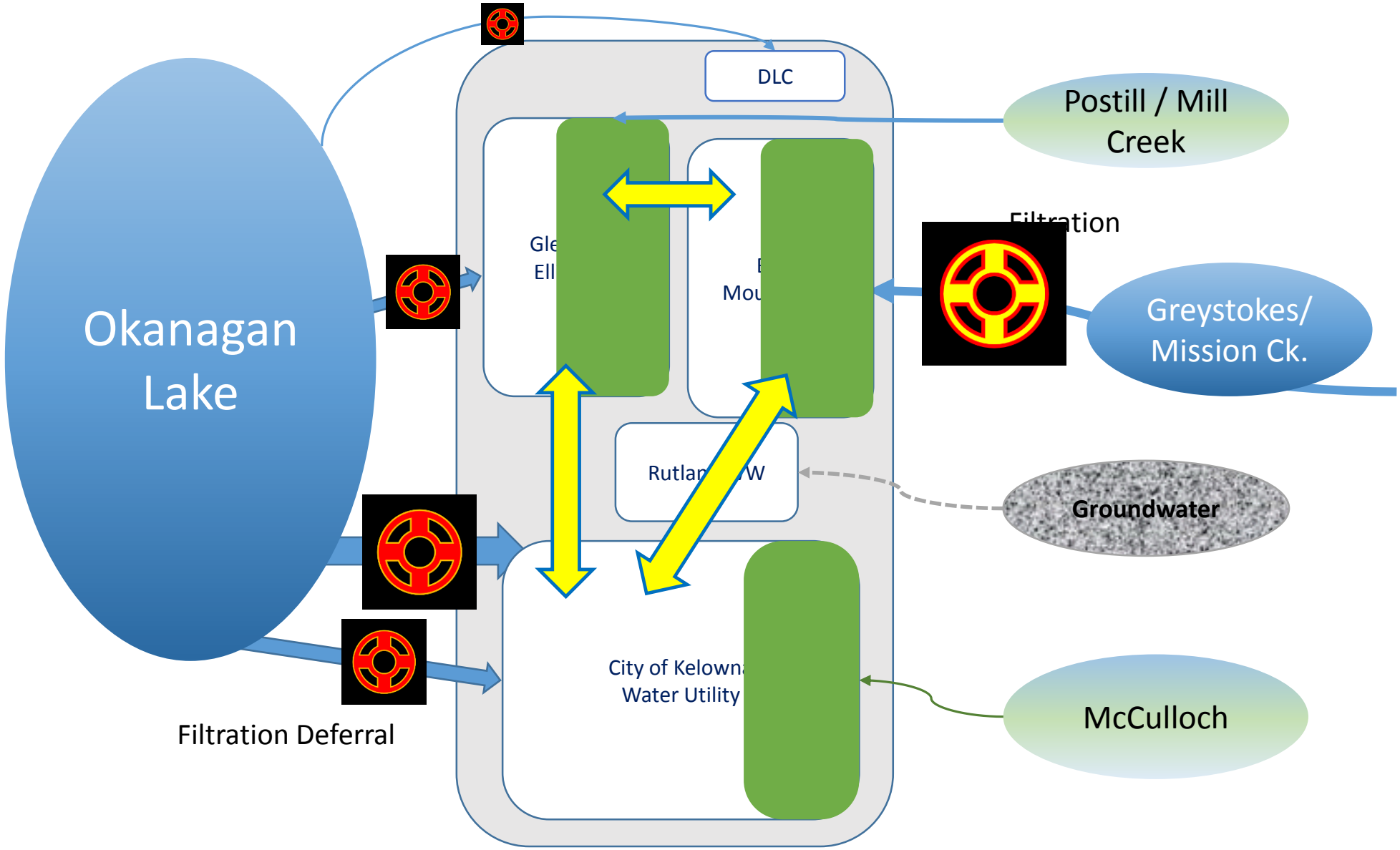
AGENDA

- Purpose
  - Kelowna Water Integration Plan
- Area Based Water Management Planning
- Sector Highlights
- Next Steps
- Questions

Water - Current

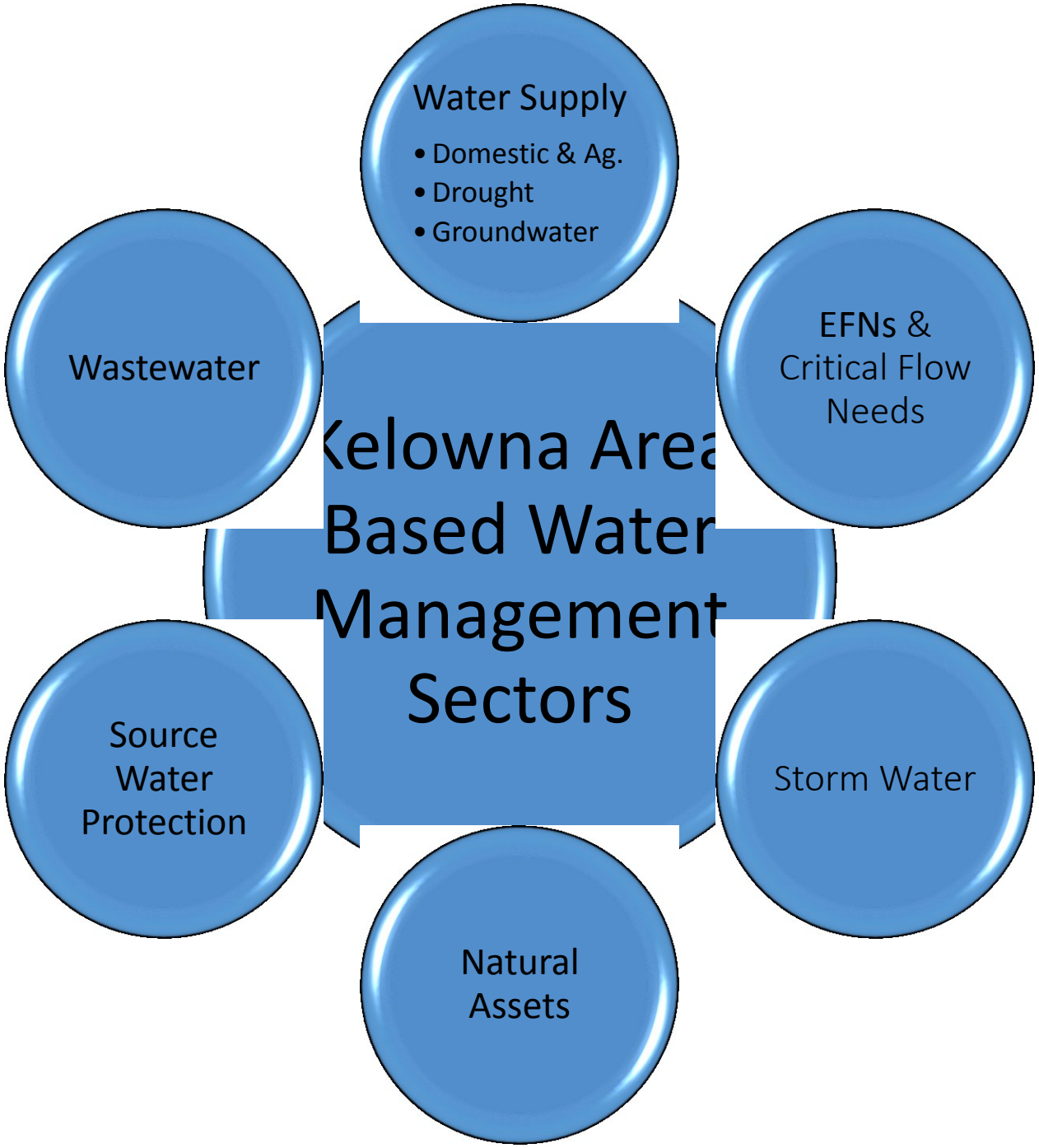


Kelowna Water Integration Plan - 2017



STRATEGIC MANAGEMENT PLANNING
A STAGED PROCESS

Stage 1 Stage 2 Stage 3


Water Supply
• Domestic & Ag.
• Drought
• Groundwater
Wastewater
EFNs & Critical Flow Needs
Kelowna Area Based Water Management Sectors
Source Water Protection
Storm Water
Natural Assets

REFERENCES

Province of BC*

- Liaison Team
  - Ministry of MA&H
  - Ministry of E&CC
  - Ministry of FLNRORD
- Provincial policy & legislation.
- Planning & management priorities.
- PHO's Drinking Water Report

First Nations & Canada

- Canadian Drinking Water Quality Guidelines
- First Nation Principles
  - Respect for Water.
- ONA Flood & Debris Movement Study
- Fishery enhancement.

WORK AREAS

Current policy, guiding principles and current practice write-ups

Risk Registry

Provincial engagement

Stakeholder engagement

Goals and gap analysis

STAGE 1 STATUS

Work Completed - 2019

- Guiding Principles and Existing Policy Review
- Current Practice Review & Documentation
- Participant Engagement – SWOT Analysis

Near Completion - 2020

- Risk Registry
- High-level Goal Setting
- Gap Analysis
- Prioritize Best Management Practice Reviews

Water Management
Risk Level Rating & Mitigation Assignments

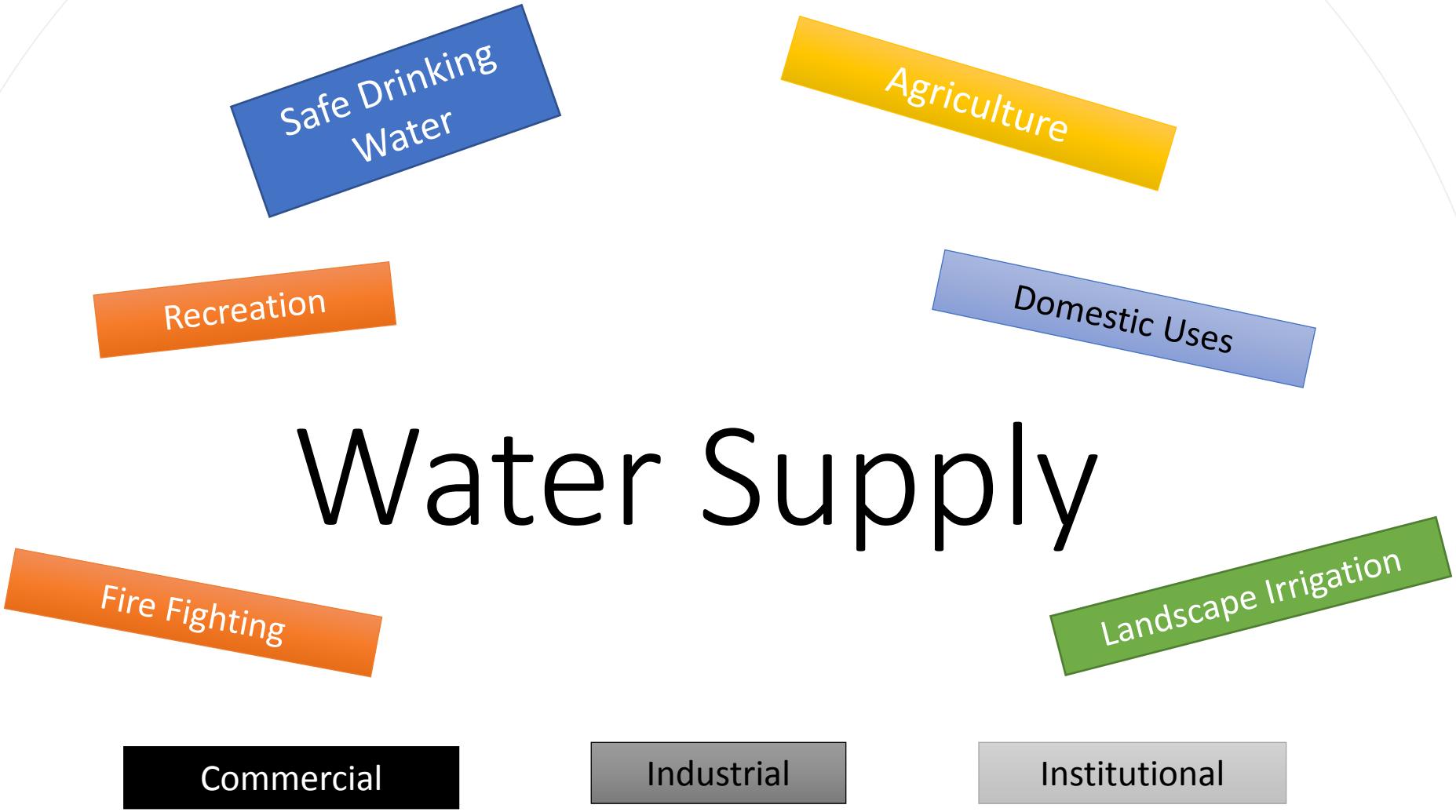
Overall Risk Level	Strategic Plan	Priority for Action	Assigned To
EXTREME	**Requires the attention of Area Based Water Management Plan to address**	Requires action from City Council or other jurisdiction.	Mayor and City Manager.
VERY HIGH		Requires direction and long-term plan with support from multiple departments.	Senior Management Team
HIGH		Priority changes requires in 10 Yr plan and within a Division.	Division Manager
MODERATE	Managed within a Division or Department Plan or by others.	Issues must be addressed by assigned Division(s).	Assigned to Manager(s)
LOW			

SECTOR HIGHLIGHTS

Area Based Water Management Plan

Stage 1 – Late stage

Preliminary Goals, Gaps & Strategies


Safe Drinking Water
Agriculture
Recreation
Domestic Uses
Water Supply
Fire Fighting
Landscape Irrigation
Commercial
Industrial
Institutional

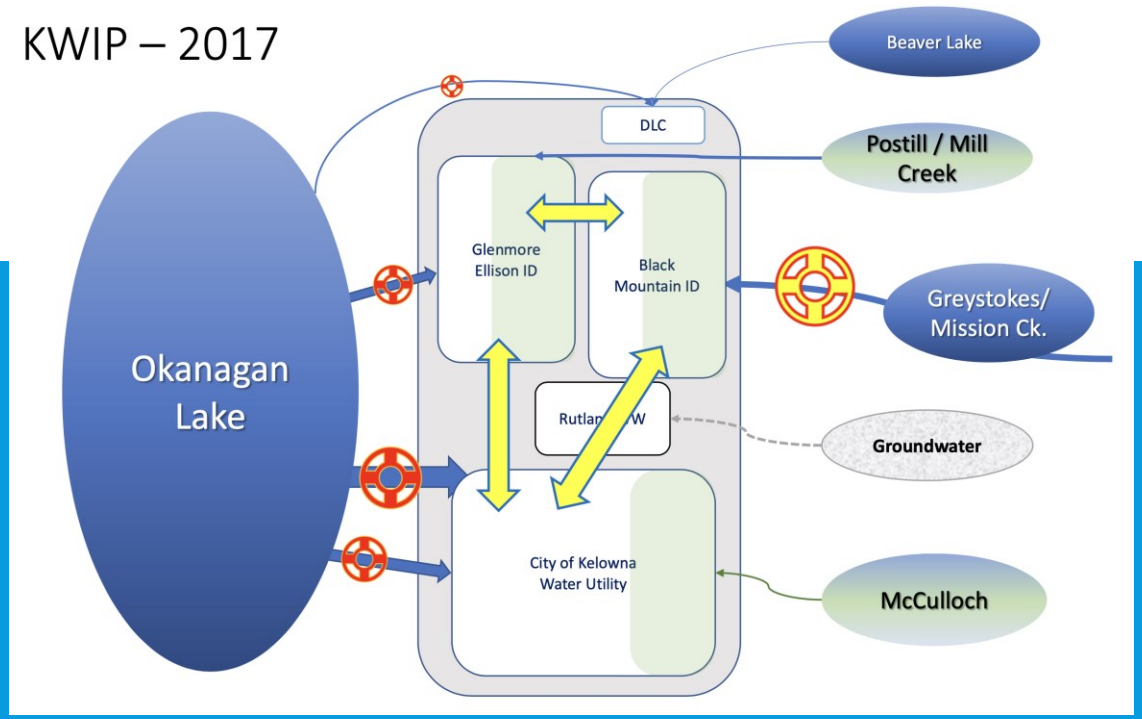
WATER SUPPLY

2040 Level of Service

All residents and customers in the City are provided a safe, resilient and sustainable supply of high-quality drinking water and a reliable supply of non-potable water for agriculture.

- Emphasis on Okanagan Lake protection.
- Multiple and interconnected suppliers.
- Domestic & agricultural capacity.
- Filtration deferral still in effect.
- Regulatory compliant and forward looking.

KWIP – 2017



Management Issues and/or Gaps:

- *Multiple water systems & sources*
- *Domestic & Agricultural Customers*
- *Differences in Water Quality*
- *Infrastructure Decisions*
- *Governance*
- *Funding*

STRATEGIES FOR KELOWNA WATER INTEGRATION PLAN (KWIP)

WATER SUPPLY

Infrastructure Plan:

- Water supply to meet growth
- Separate agricultural and domestic systems
- Water resiliency – interconnection
- Mission Creek source & treatment
- Asset replacement (independent systems)

Develop financial strategy and funding structure:

- Capital plan (10yr and 20yr)
- Asset management
- New taxation method and/or borrowing
- Senior government funding

Implementation Plan:

- Staging of integrations to match capital plans
- Funding strategy

Plan Approval – Agreement with Province

- Staging of infrastructure work
- Funding sources
- Schedule of integrations

***Yellow**
Strategies developed with other jurisdictions

Source Water Protection

Creek Water Quality

Okanagan Lake Water Quality

Land Use Control

Operation Permits

Multiple Agencies with Partial Control

Public Education

Major Infrastructure Implications

SOURCE WATER PROTECTION

City Goals:

To provide a consistent water quality; whether raw or at the tap.

To establish or foster a consistent and transparent SWP management system for all Kelowna purveyors.

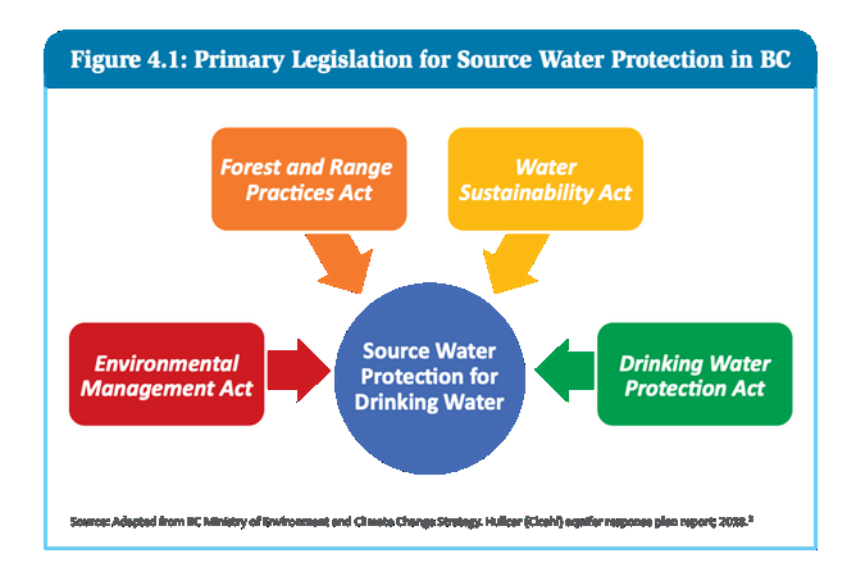
SWP is the single most complex water management issue in the Okanagan Valley.

Anna Warwick Sears (OBWB)

STRATEGIES FOR KWIP

SOURCE WATER PROTECTION

- Management Issues and/or Gaps:
  - How do we protect the Lake?
  - Ensuring CDWQ guidelines given the many independent water systems in the City.
  - Lack of City control of watershed activities, land development and operations that impact water quality in creeks and Okanagan Lake.
  - Many actors with limited government oversight – forestry, farming & general public.
  - Numerous and overlapping legislation.
  - Insufficient funding and resources to date for SWP.
  - City interest in Mission Creek – KWIP vision.



STRATEGIES FOR CONSIDERATION

SOURCE WATER PROTECTION

Planning/Engineering

- Participate in source water plans that include local intakes, *headwaters and Okanagan Lake.*

Policy Governance

- *Investigate/negotiate/implement best governance and shared management approaches.*
  - *Elevate role of local stewardship /agency consortium (City, RDCO, IDs & IHA) to manage SWP in Kelowna's watersheds.*
  - *Elevate role of OBWB to manage SWP in Okanagan Lake.*

***Yellow**
Strategies developed with other jurisdictions

Environmental Flow Needs

Fish & Aquatic Life

First Nations

Regulations

Water Supply Licensing

ENVIRONMENTAL/CRITICAL FLOW NEEDS

City Goals:

To assure a resilient and safe supply of water to the City.

To foster a healthy aquatic ecosystem demonstrated by regular and consistent seasonal migration of fish stocks.

Management Issues and/or Gaps:

- City operations currently only support Hydraulic Creek and lower Mission Creek flow.
- Other major creek flows supported by GEID & BMID reservoir storage release.
- Lack of common understanding on species that rely on Critical Flows, seasonal flow rate demands and ideal temperatures (include climate change).
- Impacts from regulatory changes. EFN understanding is still in infancy. Changes to regulation can be expected.
- New water licenses will require an EFN review.
- City policies require review to incorporate EFN.

STRATEGIES FOR CONSIDERATION

ENVIRONMENTAL/CRITICAL FLOW NEEDS

Planning/Engineering

- Educate agencies on base flow depth and temperature conditions for key natural and major water systems.
- Develop, update & implement Water Management Plans for fish-bearing creeks.
  - Identify/develop storage in headwater creeks that support flood mitigation and EFN.
  - Review headwater reservoir discharge practices.
- Plan for drought conditions and practices.

Policy & Governance

- Support aquatic enhancement within City.
- Investigate/negotiate/implement best governance/shared management approaches.

Yellow
Strategies developed with other jurisdictions

Public Safety

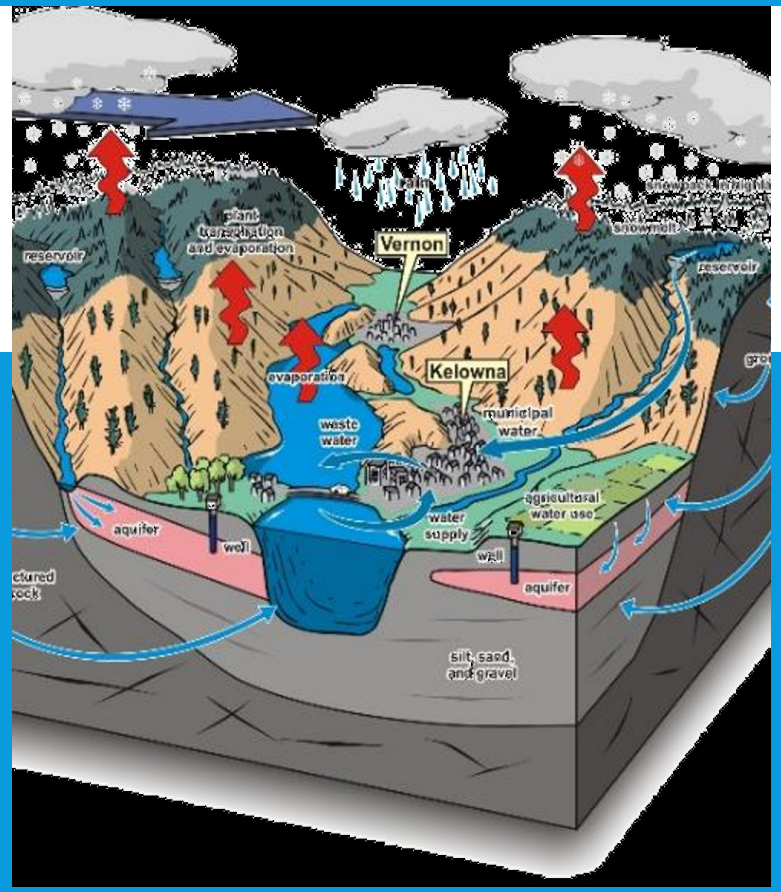
Property Damage and Nuisance

Business Disruption

Infrastructure

Stormwater Management

STORM WATER



City Goals

To provide efficient and reliable minor system collection and conveyance to natural water features, thereby minimizing impact to other infrastructure, water quality and Okanagan Lake.

To plan and construct major system infrastructure to mitigate flooding, soil erosion and pollution to protect our community and preserve our natural assets.

Management Issues

- Lack of dedicated funding for Storm Water management.
- Creek water quality.
- OCP growth impact along Mill Creek.
- Lack of City control or role in headwaters outside its jurisdiction.
- Creek/flood management requires access to private property.
- Climate Change impacting peak runoff from upper watersheds.
- More frequent and intense rain events.
- Irrigation reservoirs are not purposed for flood management (peak shaving).

STRATEGIES FOR CONSIDERATION

STORM WATER

Planning/Engineering

- Work to develop & implement flood mitigation plans for all City impacted watersheds.
- Improve riparian conditions of creeks to improve flood management and water quality characteristics.
- Position City for Senior Government Grants.
- Improve stormwater management practices to reduce impacts to major creeks and Okanagan Lake.

Policy & Governance

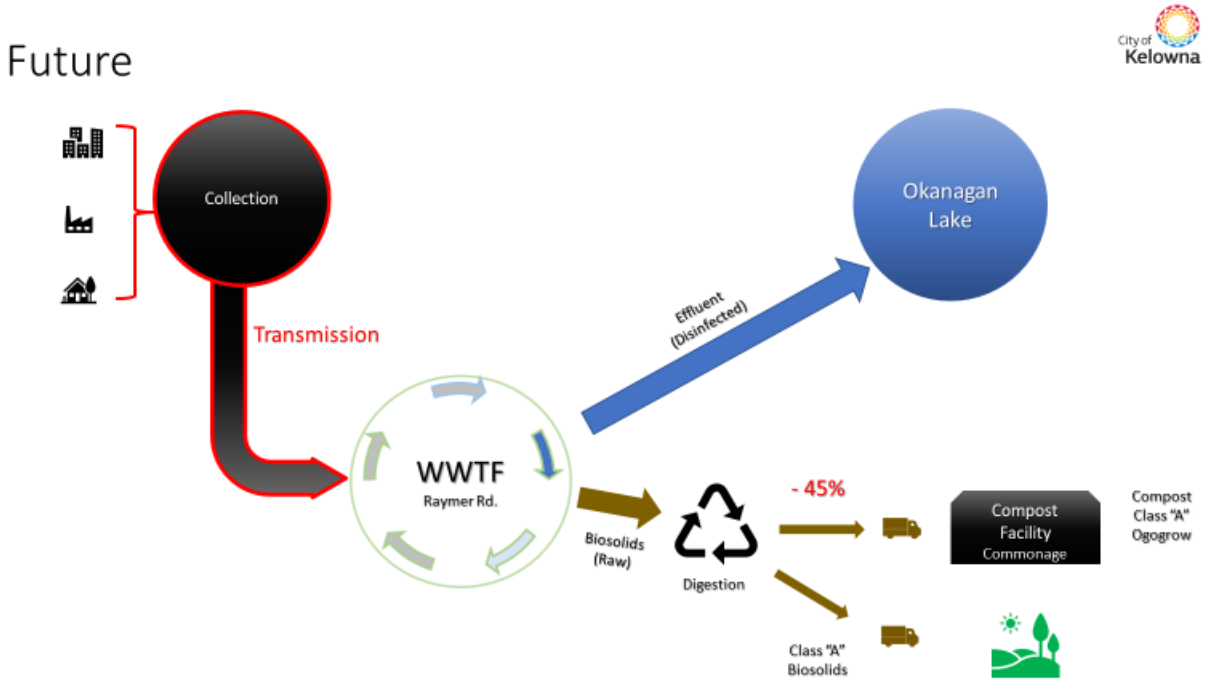
- Achieve agency support for major system and natural asset definitions to allow maintenance of creeks and ponds.
- Provide for ground infiltration of Minor Systems where possible.

***Yellow**
Strategies developed with other jurisdictions

Wastewater Management

- Wastewater is a result of humans.
- It can be toxic, degrading to receiving waters and/or distasteful (ie. odour) to the public without proper treatment.
- Many communities or individuals contribute wastewater to Okanagan Lake.

WASTEWATER



City Goals:

To expand and enhance a wastewater management system that is sustainable, meets the needs of the City's growth and discharges safely to Okanagan Lake.

Management Issues:

- Effluent quality to Okanagan Lake must always be excellent.
- Existing developments that are still on septic.
- Access to senior government funding.
- Biosolids Management
- BNR process is highly effective, but sensitive to shocks to the system.
- Tracking viruses or pharmaceuticals.
- The City's wastewater practice is sustainable. What about other communities?

STRATEGIES FOR CONSIDERATION

WASTEWATER

Planning/Engineering

- Implementation of new Biosolids management plan (Digestion).
- Research BMP for new identified pollutants.
- Position City for Senior Government Grants.

Operational

- Improve monitoring and enforcement of illegal or extraneous inputs (Sewer Bylaw).
- Adapt wastewater treatment and discharge management/measures to match source water protection controls on Okanagan Lake.

Policy Governance

- ***Investigate best governance or shared management approaches for all jurisdictions that discharge to Okanagan Lake.***

***Yellow**
Strategies developed with other jurisdictions

Water Management Value

Community Value

Public & Private Lands

Regulations

Infrastructure

OCP / Policy

Natural Assets

NATURAL ASSETS

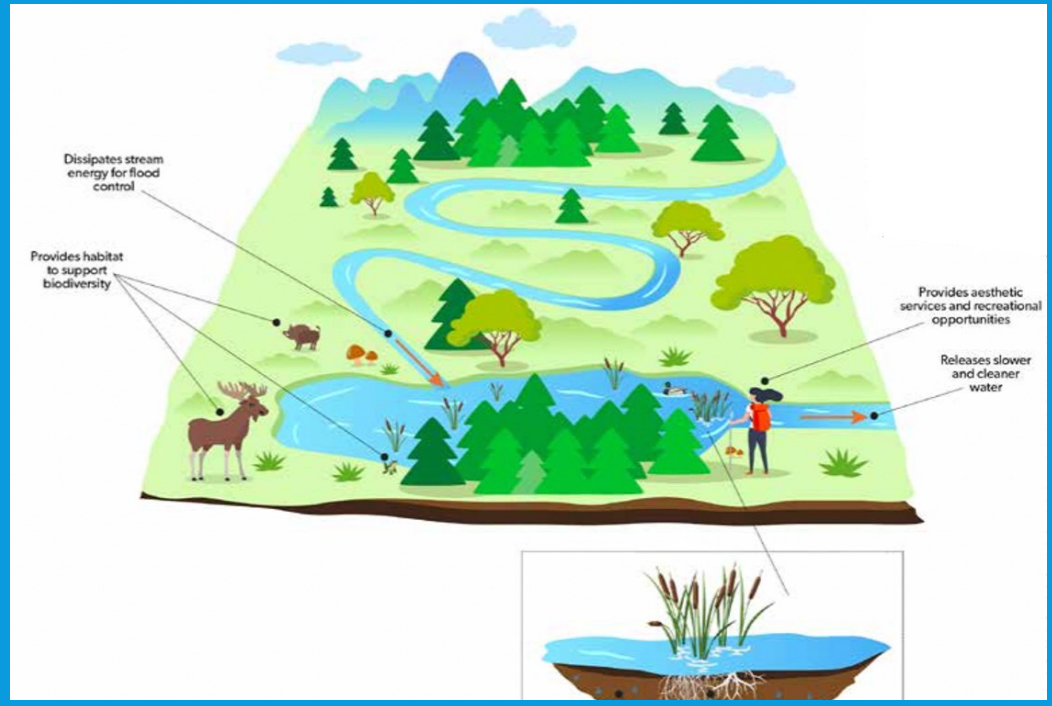
City Goals:

- To account for key natural assets in its area-based water management activities.
- To establish administrative protocols and relationships with stakeholders and others to manage NA decisions into the future.

Management Issues/Gaps:

- Accounting of Regulated vs Unregulated Natural Assets
- Clarity between regulatory constraints of Major Systems and Natural Assets
- Understanding NA values
- Governance and protection of NAs that impact the City.
- Devaluation of Natural Assets & impacts
- Incorporating NA in Asset Management

Kelowna's reputation and quality of life are dependent on our Natural Capital. We can't manage what we don't measure, and today Natural Assets are absent in the City's asset management framework.



STRATEGIES FOR CONSIDERATION

NATURAL ASSETS

Planning/Engineering

- *Improve natural asset understanding & inventory.*
- *Improve creeks and riparian areas for flood management and fish attraction.*
- *Work with the Province to define Minor, Major and Natural Assets.*

Operational

- *City involvement in watershed related activity decisions that impact water quality. Forestry, ATV, Farming, mining, etc.*
- Incorporate Natural Asset definitions into land management decision process.
- *Address natural asset management in support of Mission Creek and Okanagan Lake.*

Policy Governance

- *Investigate/negotiate/implement best governance/shared management approaches.*
- Develop natural asset policy support systems for the City.

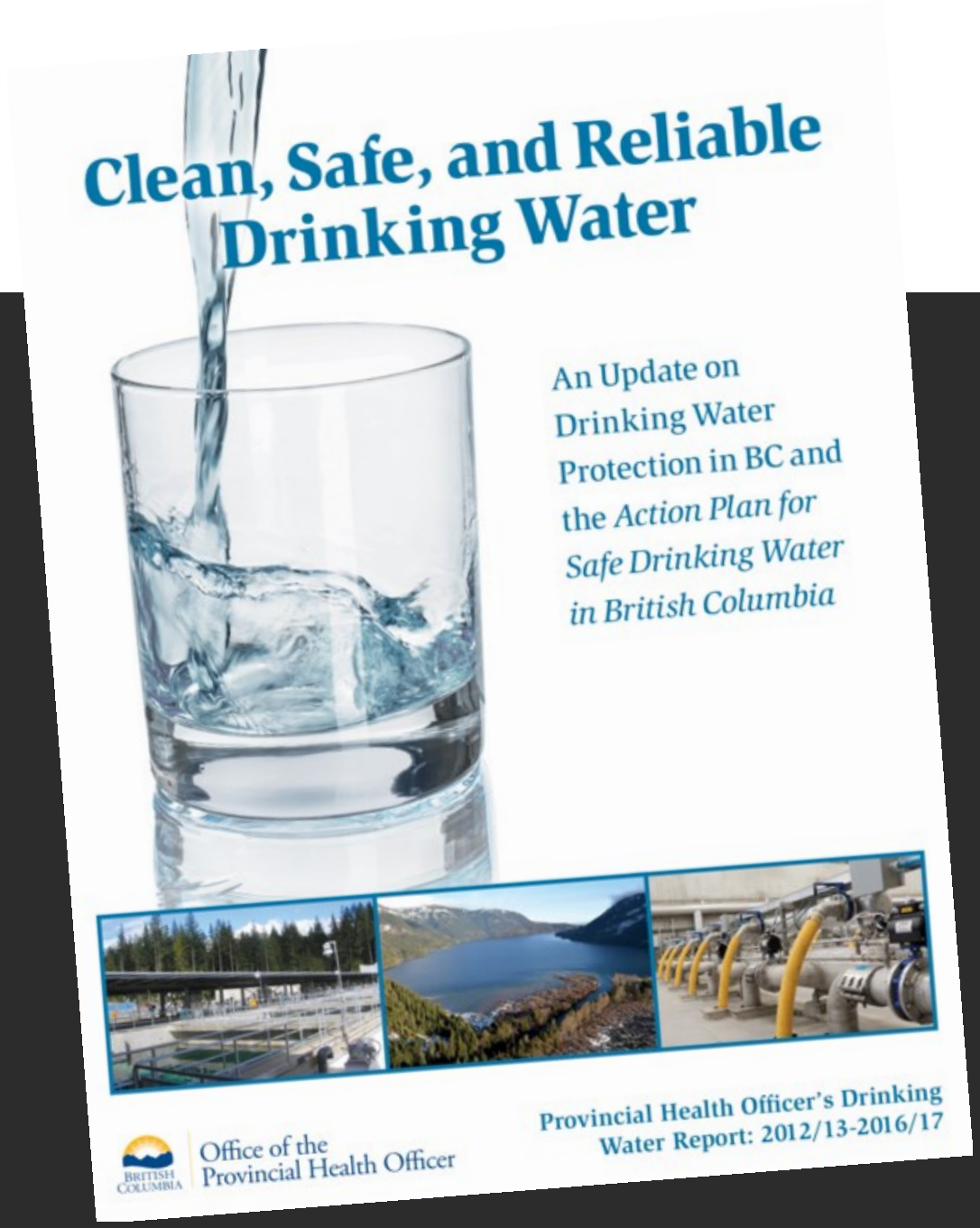
***Yellow**
Strategies developed with other jurisdictions

STRATEGIC MANAGEMENT PLANNING
A STAGED PROCESS

Stage 1 Stage 2 Stage 3

Provincial Health Officer

Report update released 2019



KEY PHO RECOMMENDATIONS FOR PROVINCIAL ACTION

#	Recommendation	Responsible Agency
3	**Inter-agency Collaboration & Coordination**: Identify a new framework for inter-agency and coordination that aligns with current structures and issues.	Ministries of Health and Environment
4	**Legislative Framework Review**: Evaluate available tools to protect drinking water and establish improved processes for coordinating actions to protect drinking water.	MoH, MoE&CCS, MoFLNRO&RD, IHA & drinking water agencies
5	**Drinking Water Protection Plans**: Review objectives and effectiveness of drinking water protection plans under existing legislation to determine if changes are needed.	MoH and PHO office.
6	**Regulatory Conflict with the Water Sustainability Act**: Collaborate on policy options to address regulatory conflicts between DW Act and WS Act.	MoE&CCS & MoH with regional health authorities and MoFLNRO&RD
7	**Public Assent Processes & the Community Charter**: Review the waiver of public assent for purposes related to treatment works for local governments (financial staging of KWIP to include resiliency)	MoMA&H & MoH
9	**Small Water System Strategy**: Recommit to an oversight body to develop a small water system strategy to prevent new small systems and promote amalgamations	MoH with support from MoMA&H, MoFLNRO&RD & MoT&I
10	**Amalgamation, Acquisition and Conversion**: Develop and resource a strategic approach to encourage and facilitate the conversion of improvement districts.	MoMA&H
13	**Source & System Assessment**: Develop a work plan to ensure that all water suppliers have a source system assessment that identifies potential risks and vulnerabilities.	IHA
14	**Treatment Objectives**: Develop process to review water systems for conformance with BC surface groundwater treatment objectives.	MoH, MoMA&H & IHA
24	**Asset Management & Financial Planning**: Review training needs and develop guidance for drinking	MoH & MoMA&H in consultation

Next Steps? Develop a plan to engage the Province?

1

Assist City with staging the Kelowna Water Integration Plan.

2

Assist City to Develop and Implement Best Management Plans for Mission Creek & Mill Creek.

3

Undertake a Best Management Plan Review of Okanagan Lake Water Quality Protection.

Questions